

The Maury Project

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LONG-TERM GOALS

The Maury Project is an oceanography-based graduate-level teacher enhancement program, designed to promote the scientific literacy of young people by improving the background of pre-college teachers on the physical foundations of oceanography. The training of teachers is through a peer-training process of training the trainers at a two-week workshop held at the US Naval Academy and subsequently via single-topic modules presented in sessions presented throughout the United States.

OBJECTIVES

This project was designed to meet the following objectives:

- (a) Master teachers will be trained to be peer trainers and resource persons on the physical foundations of selected oceanographic topics and/or issues.
- (b) Self-contained single-topic teacher-enhancement instructional modules will be prepared and provided for use by the peer trainers in 1- to 2-hour training sessions.
- (c) The peer trainers will arrange and conduct training sessions for other teachers, with support of the AMS.
- (d) A national network of oceanography peer trainers and resource persons will be developed and maintained.
- (e) A variety of instructional resource materials on the physical foundations of oceanography and related topics will be prepared and disseminated for adaptations by teachers for use in their own classrooms.

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APPROACH

There were three major components to this program: summer workshops for master precollege teachers, the production of teacher enhancement instructional resource materials, and the peer-training of teachers. The intent was to provide a core group of teachers with the knowledge and instructional resources enabling them, in turn, to train a large number of their peers on selected topics potentially appropriate as bases for learning experiences for young people in pre-college classrooms.

WORK COMPLETED

In Summer 2010, a two-week workshop for pre-college teachers on the physical foundations of selected oceanographic topics was held at the United States Naval Academy in Annapolis, MD.

RESULTS

With the training of 24 new participants in the Summer 2010 Maury Project workshop, a total of 406 teachers representing all 50 states, the District of Columbia, Puerto Rico, American Samoa, Argentina, Guam, Mexico, South Africa, Canada, Great Britain, Australia, Switzerland, Japan, and US Department of Defense Overseas School System have become peer trainers since the first peer-trainers summer workshop.

IMPACT/APPLICATIONS

Maury Project summer workshop participants are committed to organizing and offering a minimum of two single-topic training sessions lasting from one to two hours each.

Since Summer 2009, a total of 101 peer-training sessions on Maury Project topics were presented for 1,386 teachers. Summer 2009 workshop participants offered 44 of those training sessions for 482 teachers. An additional 44 training sessions were presented by teachers who attended the summer peer-trainers workshop in years prior to 2009. Six Summer 2010 workshop participants have already reported 13 training sessions for 59 teachers.

To see the multiplying effect of this program, consider that since its inception, almost 2,000 workshops have been conducted by peer trainers across the country, reaching over 30,000 teachers, each of whom reaches about 100 students daily.

TRANSITIONS

Beginning in Spring 2004, Maury Project alumni have played major roles in the development and implementation of *DataStreme Ocean*, a semester-long teacher enhancement course that is being offered nationwide by the AMS with NOAA support. Maury Project alumni lead 28 Local Implementation Teams (LITs) for the course. Through Spring 2010 Semester, a total of 2,708 precollege teachers were trained by this program. In Fall Semester 2010, another 180 teachers are enrolled.

Originally funded by the NSF for 3 summers starting in 1994, the existing Maury Project Summer Workshops at the Naval Academy received additional NOAA, Navy, and AMS support. Funding from

ONR assures the continuation of the workshops through Summer 2013. ONR has committed substantial support towards this continuation and is now its major sponsor.

RELATED PROJECTS

Building on the experiences gained in the Maury Project and the *DataStreme Ocean* distance-learning teacher enhancement course, the AMS has developed an introductory college-level course entitled, *AMS Ocean Studies* (formerly termed *Online Ocean Studies*). The course was pilot tested in the Spring 2005 semester at 12 undergraduate institutions and to date over 138 undergraduate institutions and 15 high schools have licensed the course. This course would not exist without the experiences gained and the learning materials that evolved from those developed in the Maury Project. A major benefit of the now titled *AMS Ocean Studies* course is that it will reach hundreds of preservice pre-college teachers.

AMS Ocean Studies Diversity Project, an offshoot of our work with the AMS Ocean Studies undergraduate course is a direct result of an NSF grant and NOAA support to provide special workshop opportunities for faculty at institutions serving significant numbers of minority students. Workshops have been held each summer at the University of Washington/NOAA facilities in Seattle, WA from 2006-2008. Seventy-seven minority serving institutions have already offered the course to over 5,000 students, providing an opportunity to sample an oceanography course where none existed prior to this program.

PUBLICATIONS

Talks:

AMS pre-college teacher professional development courses: A hands-on exploration of the dynamic Earth system, Dr. James Brey, AMS Education Program Director, 90th Annual AMS Meeting, Atlanta, Georgia.

National-Local Partnerships to Increase Science Literacy, Dr. James Brey, AMS Education Program Director, 38th Conference on Broadcast Meteorology, Miami, Florida.

The AMS Education Program's Professional Development Programs for Precollege Teachers, Dr. James Brey, AMS Education Program Director, 2010 Federation of Earth Science Information Partners 2010 Summer Meeting (ESIP), Knoxville, Tennessee.

DataStreme Earth's Climate System and AMS Climate Studies: Real-World Climate Science Exploration for K-12 Teachers and Undergraduate Students, Dr. James Brey, AMS Education Program Director, National Council for Geographic Education (NCGE) 2010 Annual Conference, Savannah, Georgia.

AMS Education Program: Fostering Scientific Literacy of Pre-college Educators and Students, Dr. James Brey, AMS Education Program Director, National Science Teachers Association Area Conference in Baltimore (NSTA), Baltimore, Maryland.

AMS Education Program: Professional Development Courses Exploring the Atmosphere, Ocean, and Climate, Dr. James Brey, AMS Education Program Director, and Dr. David Smith, USNA, National Science Teachers Association Area Conference in Nashville (NSTA), Nashville, Tennessee.